Financial Sustainability of Research Centers in a University Setting

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Abstract

The scarcity of research universities in developing countries, as well as the global acceptance of the need for research, has created a chasm that is currently attempted to be bridged by the presence of university research centers. Considering that research centers are primarily organized to foster research by bringing together faculty researchers from varied disciplines, revenue generation is not within its most immediate mandate. As such, they are often viewed as cost centers, placing them in the mercy of available government funding as well as budget allocations from the university that they belong to. This study endeavored to explore the financial viability of university research centers by projecting its results of operations from a set of reasonable assumptions. Composition analyses of its estimated revenues and expenses were performed. It was found out that, for a start up research center, the primary revenue sources were that of student research fees and the proceeds from the sale of research journals. Consequently, it was seen that substantial investments need to be made to develop the research culture of the institution and to have researchers. The study concluded that the operation of a research center in a university was found to be financially viable. It was further recommended that administrators of institutions of higher education must view university research centers as possible business centers, and that revenue sources must be explored.

Keywords: university research centers, financial sustainability, research culture sustainability

1.0 Introduction

The changing landscape of the world's thirst for information and knowledge has taken the call for research to a whole new level. The impending advent of the knowledge economy has forced governments and societies to recognize the necessity of research and the contributions that it makes to humanity. Now more than ever, the research culture of higher education institutions are placed in the limelight, scrutinized by the pressures and demands of regulatory agencies, governments, and the public. Defined by Robbins et al (1994) as the system of shared meaning about research as formed by the perception of the organization's members, research culture is a phenomenon that remains to enjoy considerable attention among members of the academia. Recognized as a fundamental part of the functions of higher education institutions, the need for research has been resonated with urgency especially among universities in developing countries. Sanyal & Varghese (2006) vividly exposed the discrepancy between developed and developing countries in the area of research when they pointed out that the universities in developed countries have an entrenched tradition of research,

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while those from developing countries have been seen to maintain strong functions over instruction while having weak research roles. The question then of how to develop a research culture and how to enhance the research function ultimately brings us to the people in the university who are expected to generate new knowledge through research --- the members of the faculty. Salazar-Clemena and Almonte-Acosta (2007) pointed the spotlight to the faculty as the primary source of research in a university. The same authors succinctly described the magnitude of the role played by the university faculty by acknowledging the trinity of educator, researcher, and active citizen, all of which reside within the faculty member. With this trifocal role rested in their shoulders, it is no wonder then that encouraging faculty members to do research becomes a daunting mission. Sustaining the research culture becomes an equally overwhelming undertaking. With the necessity of ingraining research in the university's culture and the need to encourage and sustain the faculty's role of research, universities have followed the practice of setting up university based research centers.

A university research center has been defined by Bozeman and Boardman (2003) as "a formal organizational entity within the university that exists chiefly to serve a research mission, is set apart from departmental organization, and includes researchers from more than one department". Originally attributed to a response to various funding opportunities (Winkler, 2014; Sabharwal and Hu, 2013), the advantages and disadvantages of university research centers have spurred a number of studies dedicated to an enumeration of its pros and cons. For example, faculty members who are affiliated with research centers have been found to exhibit an increase in research productivity (Ponomariov and Boardman, 2010), with co-authorship of research papers being credited for higher article productivity (Sabharwal and Hu, 2013). Successfully managed research centers can promise the university a string of benefits, ranging from improved visibility to an enhanced reputation which is eventually equated to attracting exceptional faculty and students (Winkler, 2014). Gaughan and Corley (2010) also found the presence of university research centers to yield positive results in the context of relationships with people in business and the forging of industry partnership, particularly in research and development projects. A research center can also contribute to the faculty as an individual. Together with the research support afforded to the faculty in terms of subject de-loading and incentives, the affiliation with a research center also enhances the profile of the faculty concerned (Winkler, 2014).

The benefits attributed to research centers also come with corresponding areas of concern. The manner of managing a university based research center must take into consideration the peculiarity that comes with the non-traditional set up of the entity. For example, competition between the research center and academic departments for the university's limited resources, as well competition among faculty members for research support (Boardman and Bozeman, 2007) often come up as challenges. The major problem that is usually encountered by university research centers, however, is the issue on resources. Considering that research centers are primarily organized to foster research by bringing together faculty researchers from varied disciplines, revenue generation is not within its most immediate mandate.

The dependence of the research center on research grants and budget allocations from the university resources places it at the mercy of administrators availability of funds. Knowing the importance of research in the university setting, it is then judicious to look into its financial sustainability should it function as an autonomous unit within the university.Interestingly, there is a dearth of

literature that explored such plans and projections for financial sustainability. It is, therefore, the aim of this paper to look into the feasibility of the research center to exist as an independent unit and the projection of its financial capacity to do so.

2.0 Methodology and Assumptions

This study is an assessment of the viability of the research center as a separate business unit in a university. Research universities are scarce in middle income and developing countries (Altbach, 2007) principally because of the costs ingrained in its formation and continued existence. The financial constraints, however, should not be a deterrent for the advocacy of participating in the world knowledge system by promoting research capability (Altbach, 2007). University research centers, then, can be the response of developing and middle income countries to the call for strengthening research undertakings worldwide.

In order to evaluate the practicability of university research centers, the researchers developed a set of reasonable assumptions that focused mainly on the operations of the research center. Assumptions regarding its administrative control, including its level of autonomy, were formulated to serve as the backbone of the projections. Sources of revenues and expenses were also anticipated. From these assumptions, a five year financial model was created. The said financial model depicted the overall financial implications from a simulation of scenarios expected to occur. A composition analysis of the sources of revenues, a composition analysis of expenses, and scenario analyses on the research center's major source of income formed the core of this financial model. It is urgent to run a feasibility study of the research center citing the necessities of its existence in a university, thereby, assisting top university administrators in the strategic planning of the university research center.

The principal assumption in this paper was that the research center is an autonomous segment of an existing university in a developing country. In order to facilitate the projections, the researchers decided to set the locale of the university in the Philippines. As such, Philippine peso was used as the basis, with conversion to US dollars where appropriate. An exchange rate of 45 Philippine pesos to one US dollar was used. The autonomy of the said research center is defined by its ability to make decisions regarding its operations and major functions. Considering that the research center is still part of the school, other governance functions remain with the university. The center assumes the regular operational activities and management, but initiatives affecting the segment substantially (e.g. more than 5% effect on the entity or operations) or those that affect the major functions of the university will be reserved to the university board's approval. Considering that this study looks at the feasibility of a university research center, the researchers further assumed that the expenditures and investments related to the research center's office, furniture, computer equipment, and other amenities are borne by the university. Salaries of the research director and the office staff, as well as operating expenses such as utilities were assumed to be shouldered by the university as well; all other expenses were assumed to be borne by the research center.

The revenues of the research center were assumed to come from the following: (1) research fees collected from the students; (2) proceeds from journal sales; and (3) services provided such as plagiarism and grammar checks, statistical services, and trainings. Since this is a developing research center, research grants and consultancy engagements were not opted as a revenue source of the research center on this phase yet.

It was assumed that the university collects a research fee from all of their students regardless

of whether they come from basic education or the college level. The said research fee revenue was based on the current college and basic education student population of a local university. The college and the basic education research fees are collected on a semestral and school year basis, respectively. The researchers further assumed the semi-annual issue of the university's research journal. This is where the second source of revenue was assumed to be generated. It is expected that other universities or institutions of higher education will purchase the research center's journal. The population of university purchasers factored by a conservative buying percentage of 15% will serve as the basis for this revenue source. Furthermore, the buyers from these universities were expected to get 5 copies per issue of the research journal.

The third expected source of income comes from the services provided by the research center. It was assumed that the university will craft a policy that requires all research classes to present their outputs for plagiarism and grammar tests, as well as statistical services where appropriate. These services will be charged with a corresponding fee. For this purpose, it was estimated that 15% of the student population is enrolled in research classes, and that each research class has 5 members per group. In addition, software subscriptions for the plagiarism and grammar tests were assumed to be made available to outside parties via the sale of excess user accounts. It was assumed that 50% of the user accounts were sold. Another source of revenue for the research center is the conduct of capability trainings. The assumptions relevant to this are presented together with the related assumptions on expenses for capability trainings. It is to be noted that the Philippines is currently adopting the revision of their educational system by implementing the K+12 program. As such, a decline in the population was also considered when appropriate.

To complete the picture of the operations of the research center, a set of assumptions were also made for its expenditures. The major expenses of the research center were assumed to be from the following: (1) research capability training for faculty members; (2) journal production cost; and (3) software subscription cost. Since the researchers have placed the setting of this research center at a university in a developing country, it was anticipated to be a research center which is just starting up. As such, it was projected to invest heavily in developing its faculty's research capacity by embarking on a research capability training program. This research capability training is an activity intended to promote the research culture of the university and shall run within a ten-month time frame per batch. There will be 3 batches which will be trained from years 1 to 3, with each batch consisting of 15 faculty members. The costs associated with this training include the 12 units per semester de-loading for each concerned faculty member and the estimated recurring costs of the training such as accommodation and professional fees.

In order to protect the university's finances in relation to the uprooting of its faculty from classroom instruction to research work, it is to be emphasized that the salaries of the faculty equivalent to the 12 units de-loading per semester are to be paid by the research center. In this manner, the university will not have any adverse financial setback when it comes to faculty de-loading. In order to maximize this activity, the researchers suggested that the training will also admit 15 additional members who will be coming from outside parties such as faculty members from other universities who are also interested in developing their research capabilities. Each participant shall be charged an appropriate fee. The said fee shall be recorded as part of the research center's research capability training revenue. To appropriately

demarcate the expenses related to this research capability training, the researchers opted to label as "internal research capability training" the expenses related to the training of the university's own faculty members. The expenditures pertaining to the external members, however, were labeled as "external research capability training".

The researchers acknowledged that the research capability training may not be enough to sustain the required number of articles necessary to produce a semi-annual research journal. Hence, the research capability training was assumed to be supported by a research program incentive for those who are not able to participate in the training. The incentives include 6 units de-loading and a cash incentive of 25,000 pesos (equivalent to 556 US dollars) for every research article published per semester. The research program incentive was anticipated to be offered on the first semester only. On another note, the journal production cost was composed of the cost of printing and the peer reviewers' honorarium. The printing cost was computed at 50% of the estimated selling price of the journal. The honorarium is 1,500 pesos (equivalent to 33 US dollars) for each reviewer. The journal will be composed of 25 multidisciplinary articles per issue, with each article requiring two peer reviewers. Additionally, the costs of the software were estimated to be 3,500 US dollars and 750 US dollars per year for the plagiarism and grammar test, respectively.

The price of the plagiarism and grammar test was assumed to increase by 25% starting year 3. Inflation rates of 3% were entrenched to the succeeding cost of the internal research training due to the expected average annual salary increase of the university. The external research capability training and software costs have inflation rates of 5%. The journal production and incentive expenses are not vulnerable to price changes, thus, inflation was not incorporated.

3.0 Presentation, Analysis, and Interpretation of Data

The data presented below are drawn from the financial model created. The following methodologies are done in this part: the composition analysis of the kinds of revenue, the composition analysis of expenses as percentages to the gross revenue, and the scenario analyses.

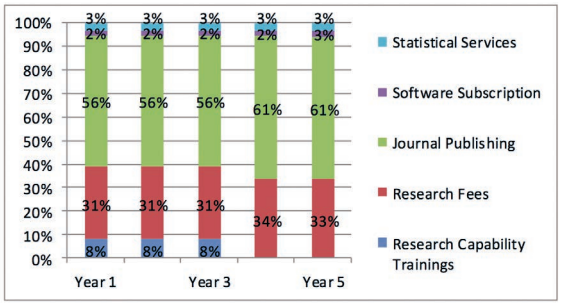

Figure 1 Revenue Composition Chart

Figure 1 shows that the major revenue drivers of the simulated research center were journal publishing, which represented proceeds from the sale of the research journal, and the students' research fees, respectively. This means that for a start-up research center such as this, dependence on student research fees is to be expected. Revenue sources for research capability trainings only comprise 8% of the total revenues. It must be recalled that this revenue source only exists together with the duration of the research capability training program for the university's own faculty members. It is interesting to note that while it is obligatory to invest heavily in the training of the faculty to make them research capable, the cost associated with this was also able to generate revenues for the research center. On the other hand, the software subscription and statistical services are merely support services and are not a substantial source of revenue stream.

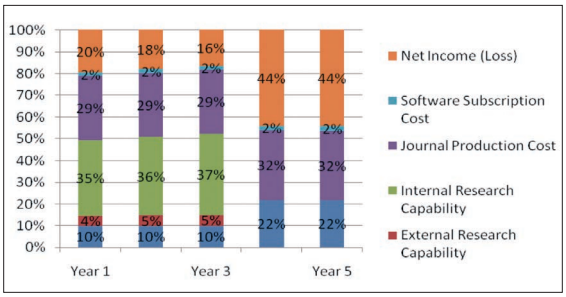

Figure 2 Expense Composition Chart

As presented in Figure 2, the top cost drivers of the research center are journal production costs and the internal research capability training. The journal production cost includes the cost of printing and the incentive scheme for those researchers who were not part of the internal research capability training. The internal research capability training, on the other hand, includes the necessary costs of training and the de-loading of the 15 faculty members per batch. Considering that journal publishing is seen to be the prime source of income for the research center as shown in Figure 1, it is also logical that the journal production cost and the internal research capability training occupied the highest percentage in the research center's expenses. These costs are essential for the nature of the said revenue source.Internal research capability training, journal production cost, and research incentives expenses are 74% to 76% of the revenue from first to the third year. It is noticeable that costs on attaining the journal revenue are so high that it will not be able to recover the full cost. As mentioned earlier, the assumption used in this study was that of a research center in a university that is just starting to establish its research culture. Hence, investments to create a healthy research culture and actions needed to develop research capability among faculty members must be made.

The research capability training will be stopped at year four because the center is already expected to have produced a significant number of research-capable manpower. The said costs on the journal plunged to 43% from the fourth to the fifth year because the research capability training is halted, thereby, gaining return on cost of 42%. Since the internal research capability training was ceased, the net income for the research center ascended more than three times compared to the previous year.

Since it is identified that the research fees and journal publication are the prime sources of earnings, the researchers made a scenario analysis on these factors. The first analysis considered research fees in relation to changes in student population. The journal revenues drove the second scenario analysis as it was examined in the context of changes in percentage of universities purchasing the journals.

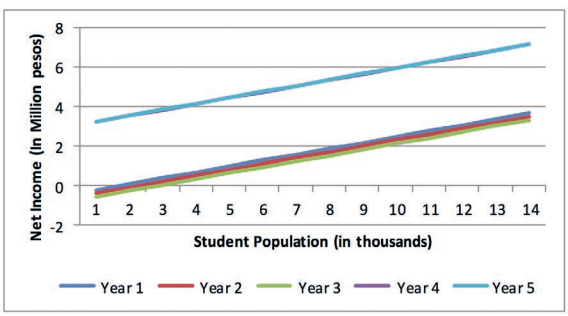

Figure 3 Scenario Analysis on Research Fees Based on Student Population

Figure 3 shows the probability of reaching and exceeding break-even is very high. In order to achieve break-even, other things held constant, the center should have an allocation of the research fees from at least 3,866 students. This was considered highly achievable by the university. It is also prominent on the chart that income from year 4 and 5 can support the research center without the aid of the research fees, other things held constant.

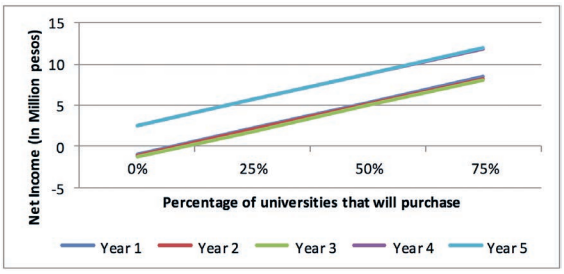

Figure 4 Scenario Analysis on Journal Sales

Based on Figure 4, the probability of exceeding the break-even point is also very high. In order to recover all costs, other things held constant, it needs at least 10% of all the universities in the Philippines to purchase the journal. This is considered fairly manageable. Other things held constant, net income from year 4 and 5 can sustain the center's operation even with zero sales from its research journal.

4.0 Conclusion and Recommendations

Based on the financial analyses and scenario analyses, findings show that the research center is a highly feasible segment of the university. The assumptions have generated favorable implications to the financial standing of the business. Based on the expected results, the center can have returns on revenue of up to 16% to 44%. The scenario analyses showedthat the risks of the expected outcomes are fairly low. On the fourth and fifth year, risks of losses are considerably very low, thus, it is unlikely to have losses. The break-even analyses of the major income sources are relatively achievable.

In this light, the researchers recommend that in the implementation of a university research center, the administrators of institutions of higher education must learn to view the research center as a possible business center. In Figure 1, journal publication and research fees are shown to be prime sources of revenue. As such, increasing these revenue sources will significantly improve the financial health of the research center. Revenues from research fees have no corresponding costs thus increasing this revenue source will provide a significant boost in the net income. It must be considered, however, that revenues from this source are a burden to the students. Hence, other revenue sources should be explored to lessen dependence on student fees, especially when the research center has already established its reputation to the community of scholars.

Additionally, extensive marketing must be undertaken to amplify the sales of the research journal. Collaborations with researchers from other universities may also be explored in order to foster good relations among the prospective buyers of the research center's journal in the short term, and to strengthen the research bond of the community of scholars in the long term. It is also very interesting that, upon comparison of Figures 1 and 2, it can be seen that the external research capability training recovered 75% to 100% of its cost. Therefore, trainings can be a plausible and considerable source of income. This, too, may be exploited as a possible revenue stream by the research center. Needless to say, once the research center has established its reputation, research grants and consultancy engagements may now be incorporated as part of its sources of revenues.

It is sad to note that an endeavor as essential as research is often placed in the predicament of finding sources of funds and support. This reality has been driven further by the traditional view of research centers as cost centers. This study, however, shows that university research centers have the ability to survive and thrive financially. Middle income and developing countries, then, must seize this opportunity to participate in the community of scholars without having the financial burden of setting up a research university stand in their way. The financial constraints felt by

countries all over the world, be they developing or developed, have made it important to be mindful of the sourcing and utilization of resources. It is the researchers' belief that these financial constraints can be allayed by a change in perspective of how university research centers are viewed. By looking at the said research centers as business segments, it is made clear that sources of revenues are available and that financial viability can be established. University research centers, then, can be one of the answers to the global demand for research.

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